

### REMARKS

Claims 1 and 3-11 are currently pending in the present application. Claims 1 and 9 have been amended herein, support for which may be found in the specification at page 3, lines 16-20. No new matter has been added by way of the present claim amendments.

#### *Claim Rejections –35 USC § 103(a)*

Claims 1 and 3-11 have been rejected under the provisions of 35 USC § 103(a) as being unpatentable over **Brown et al. US '166** (US 4,981,166) in view of **Lee US '390** (US 5,989,390).

Claims 1 and 3-11 have been rejected under the provisions of 35 USC § 103(a) as being unpatentable over **Brown et al. US '166** (US 4,981,166) in view of **Chuluda US '801** (US 4,256,801).

Claims 1, 3, 7-9 and 11 have been rejected under the provisions of 35 USC § 103(a) as being unpatentable over **Brown et al. US '166** (US 4,981,166) in view of **Ling-Chen US '874** (US 6,540,874).

Applicants respectfully traverse each of the above rejections. Reconsideration and withdrawal of each of the above rejections is respectfully requested based on the following considerations.

*Legal Standard for Determining Prima Facie Obviousness*

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

“There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art.” *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

“In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the

proposed substitution, combination, or other modification.” *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. “The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

*Distinctions Over the Cited Art*

As indicated above, claim 1 as instantly amended herein recites as follows.

*A part for casting, into which a molten metal is poured, comprising base paper for paper tubing and containing an organic fiber, a carbon fiber for reducing thermal shrinkage, and a binder, the base paper being spiral-wound into a tube such that the base paper is wound with an overlap between adjacent turns and a plurality of base papers are wound one on top of another, the total content of carbon fiber being 7 to 80 parts by weight, and the total weight of the organic fiber, the carbon fiber, and the binder being taken as 100 parts weight. (emphasis added)*

As a preliminary matter, Applicants submit that the Examiner's assertion that the claim limitation "into which a molten metal is poured" constitutes nothing more than an intended use is incorrect. The determination of whether preamble recitations are structural limitations or mere statements of purpose or use "can be resolved only on review of the entirety of the [record] to gain an understanding of what the inventors actually invented and intended to encompass by the claim." *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989). *However, a "preamble may provide context for claim construction, particularly, where ... that preamble's statement of intended use forms the basis for distinguishing the prior art in the patent's prosecution history."* *Metabolite Labs., Inc. v. Corp. of Am. Holdings*, 370 F.3d 1354, 1358-62, 71 USPQ2d 1081, 1084-87 (Fed. Cir. 2004) (emphasis added). See MPEP § 2111.02.

Here, the recitation "into which a molten metal is poured" is a structural limitation which distinguishes the presently claimed invention from those prior art references which are wholly incapable of performing this function (i.e., accommodating molten metal). When read in the context of the rest of the claim and the specification, it is clear that this is what is contemplated by the presently claimed invention. The noted limitation sets forth a distinct definition of what is required by the claimed invention.

The Examiner has relied upon Brown to show the use of a sand mold in the manufacture of a feed tube for molten metal casting. However, Brown does *not* show the particular composition and orientation of the base paper as claimed. Notably, Brown teaches that it is a particularly important feature of the invention to have a space between the edges of each cylindrically wrapped sheet to provide a plurality of spaces or openings extending through the sleeve (*e.g., see Brown Abstract and column 4, lines 18-32*).

Brown recites, in relevant part:

“[T]he sheets are wrapped in a manner such as to define *a space therebetween so that openings in the wall section of the sleeve can vent gases* produced in the mold from the metal while controlling the decomposition of the paper sleeve from casting heat.” (emphasis added) (col. 4, lines 28-32).

“Importantly, . . . the spiral is wrapped so that there is a space, “S”, between adjacent edges 17, 18 of paper sheet 14. The space “S” can vary anywhere from about ¼” to about 1½”” (col. 7, lines 49-53).

“*Proper venting is a necessity.*” (emphasis in Brown) (col. 20, lines 62-63).

“[S]pace between adjacent sheets continuing the length of said sleeve whereby *a plurality of vents* through said sleeve is created to retard the burning of said sleeve.” (emphasis added) (col. 22, lines 6-9).

In contrast, the present application clearly teaches that the base paper is wound with an overlap between adjacent turns and a plurality of base papers are wound one on top of another. Thus, the venting which is strenuously required by Brown at numerous instances is not a part of the presently claimed invention.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

In the present instance, Brown expressly teaches away from the presently claimed invention. The modification of Brown being proposed by the Examiner changes the principle of operation of Brown, thereby rendering it unsatisfactory for its intended use. Moreover, the relevant disclosure in Brown (see passages noted above) is not one of many alternative means of using the disclosed paper sleeve and system, rather, the noted passages represent the sole means of using the disclosed paper sleeve and system. Simply put, the Examiner cannot rely on Brown to teach a feature that is not in any way taught or suggested by Brown. Any modification of Brown to arrive at the presently claimed invention can only be reached by employing impermissible hindsight.

The Examiner turns to Lee, Chuluda and Ling-Chen as secondary references to cure the deficiencies of Brown. However, none of these references, individually or taken together, arrive at the presently claimed invention.

In view of the foregoing, Applicants believe the pending application is in condition for allowance. A Notice of Allowance is earnestly solicited.

Conclusion


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Monique T. Cole, Reg. No. 60,154 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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